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ABSTRACT

The concepts of resources, resources centers, and resource-based learning and their interrelationships are described and the role of resources centers in both student-centered and teacher/institution-centered educational systems is examined. Factors in three areas that should be considered in the planning, organization, and operation of a resources center are also discussed: (1) constraints such as finances, space, staffing, staff and student attitudes, and politics and policy; (2) organization and management including management structure, the resources themselves, equipment, and general administration; and (3) educational considerations such as integration with the teaching/learning system, the role of the teacher, student characteristics, and feedback and evaluation. A list of four references recommended for further reading is included. (MES)

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Resources Centres

Introduction

In "A guide to the use of individualised learning techniques", we examined the full range of teaching methods that can be used in individualised instruction and discussed the various organisational systems within which individualised instruction can be used. One of the key components of many of these systems is a *resources centre* of some sort, so we will now follow on from the booklet on individualised instruction by taking a detailed look at such centres.

We will begin by distinguishing between *resources*, *resources centres* and *resource-based learning*, and indicating how these three concepts are linked. Then, we will describe how resources centres are used in different educational systems. Finally, we will discuss some of the practical considerations that are involved in the planning, organisation and operation of a learning resources centre.

Resources, Resources Centres and Resource-Based Learning

In essence, *resources*, *resources centres*, and *resource-based learning* may be thought of as progressively more highly structured systems through which flexible *student-centred learning* can be achieved. Let us illustrate this thesis by examining each in turn.

Resources

Basically, a '*resource*' in education or training is 'a system, set of materials or situation that is deliberately created or set up in order to enable an individual student to learn'. To qualify as a true learning 'resource', the system, set of materials, etc must satisfy all of the following three conditions:

(i) it must be *readily available*;
(ii) it must allow student *self-pacing*;
(iii) it must be *individualised*, ie it must cater for the needs of students *working on their own*.

It therefore follows that a 'resource' must, by definition, be *student-centred*. Thus, in a traditional teacher/institution-centred system involving teaching methods such as lectures, timetabled laboratory classes, and the study of textbooks, it is only the textbooks that would normally satisfy the criteria for being

'resources' in the sense we have described here. However, lectures in such a course *could* be made more like true 'resources' by having them 'packaged' in some way, eg by recording them on videocassettes or making them available in some other self-study format such as duplicated notes backed up by audiotape commentaries. Similarily, a laboratory situation could be made into a 'resource' by allowing the students to have more flexible access to the laboratory facilities than is normally the case.

Resources can come in many forms. *People*, for example, can be 'resources', as, for example, when teaching staff make themselves available on a flexible basis in order to deal with individual student difficulties as and when they arise. Similarily, *places* can be 'resources', as in the case of an open-access laboratory of the type mentioned above. Finally, a whole range of *instructional materials* can be 'resources', examples including books, structured notes, videocassettes, tape-slide programmes, computer-based learning packages, and so on. Self-instructional materials in all their various formats are probably the most common type of learning resource, and these are often housed centrally in a *resources centre*.

Resources centres

A *resources centre* is a place – which can be anything from part of a room to an entire complex of buildings – that is set up (or set aside) specifically for the purpose of housing and using a collection of *resources*, usually in the form of self-instructional materials.

Resources centres (which are sometimes given equivalent names such as *learning aids laboratories* or *self-study centres*) may serve the needs of an individual department within a school or college, an entire institution, or even a collection of institutions (as, for example, when several schools are served by a single central resources centre). In many cases, such centres are housed in libraries, which often double up as 'resources centres' by providing for the storage and use of both book and non-book learning materials.

Student use of resources centres may, at one extreme, be extremely loosely structured, and, in some institutions, may not be an integral component of their courses. On the other hand, in strongly student-centred courses, students may spend a large proportion of their time using facilities offered by such centres.

The different uses that are made of resources centres, and the various factors that are involved in their planning, organisation and operation, will be discussed in detail later in this booklet.

Resource-based learning

Courses that involve *resource-based learning* generally provide for individual study by including some measure of self-teaching and self-pacing. Such courses invariably make wide use of learning 'resources' in the sense described above, and *may* make use of the facilities of a resources centre. However, true resource-based learning goes far beyond the mere use of a resources centre, involving a highly-structured system of individualised, student-centred learning experiences that make full use of both human and non-human resources. The class of resource-based learning systems encompasses all the *personalised systems of instruction* that are discussed in "A guide to the use of individualised learning techniques" (Keller Plan, open learning systems, distance learning systems, and so on), and if the organisers so wish, resources centres can be used as a basis for implementing and supporting developments of this type. It should be noted, however, that such centres are not essential pre-requisites for *all* resource-based learning schemes, since it is perfectly possible to operate a resource-based learning system without such a centre.

The role of resources centres in different educational systems

Resources centres are exploited in fundamentally different ways in different types of educational institutions, and the way in which they are used also depends to a considerable extent on the nature of the strategic approach to instruction that is adopted.

Within flexible *student-centred* approaches to learning of the type discussed in "A guide to the use of individualised learning techniques", a resources centre may have a key role to play in providing students with a whole range of learning resources together with any associated hardware that may be required for the use of these resources. Within such flexible learning systems, students are often given free access to a resources centre within a host institution, and are generally permitted to attend at times which suit *them* rather than the institution. Advice is normally given (via a 'study guide') regarding the range of resources which may be suitable to assist in the achievement of a given set of objectives within a given course unit. Teaching staff may also be present in order to assist with any problems or difficulties that may arise, and, as such, constitute another 'resource' within the centre.

In the case of courses which are based on the more conventional, more constrained *teacher/institution-centred approach*, the role of resources centres is generally completely different. Here, their role

is not so much to serve as a means of providing a front-line teaching facility, but rather to provide remedial or back-up material to support other teaching methods. Individual use of resources centres by students undertaking such traditional courses is often completely voluntary (ie is an 'optional extra'), although students may sometimes be directed or recommended to use certain resources by particular lecturers. All resources are again normally available at most times, but the choice of which particular resource(s) to use is often left to the student. Indeed, students may elect to use the facilities of a resources centre in order to study subjects that are not directly related to the content of their course – learning foreign languages for holiday purposes, for example, or studying computer programming out of general interest. However, the main use of resources centres by such students include remedial study, immediate follow-up of class work, revision before exams, and extra study carried out in order to benefit from an alternative approach to specific subject matter.

Some institution-based resources centres also lay on a programme of displays and exhibitions for general motivation and background interest purposes. This practice is most common in resources centres that are based within a particular department, or which deal only with resources in specific subject areas (eg the biological sciences or health education).

The planning, organisation and operation of a resources centre

As we have seen, resources centres can be used in radically different ways in different types of educational systems. Clearly, the method of use will have a marked effect on how the resources centre is organised and developed. Thus, there are many factors that have to be considered before embarking on the planning and operation of a resources centre, and, in the remainder of this booklet, we will take a look at some of the more important of these.

Constraints

The development of a resources centre is often constrained by a number of factors, including *finance*, *space*, *staffing*, *attitudes*, and *general educational policy*. Let us now look at these in turn.

(a) **Finance** Money is obviously required both to set up and to operate a resources centre. An initial outlay is required to buy furniture (eg study carrels, desks, chairs and storage shelfs), to purchase any necessary hardware (eg tape-slide players, cassette players and videocassette recorders) and

to purchase appropriate commercially-available resources in both print and non-print media. In addition to this 'pump-priming' money (which may be considerable), an annual operating budget is required in order to maintain and enhance the equipment and resources housed within the centre.

(b) **Space** Suitable space clearly has to be found in order to site the development. In some cases, it may be possible and desirable to place the resources centre within an existing library; in others, it may be better to use separate accommodation – particularly if the resources centre is to be departmentally rather than centrally based. The amount of space required will obviously be directly related to the amount of use that students are expected to make of the centre. Experience shows that there are liable to be peak times of use (lunch times, free periods etc) and the size of the development should, if at all possible, be sufficient to cater for such 'peaks'; in many cases, however, this is simply not practicable.

In addition to providing adequate student spaces, an appropriate amount of storage space is required, both for equipment and for resources; if possible, this should be flexible enough to cater for any planned future expansion of the resources centre.

(c) **Staffing** Several staffing problems will almost certainly have to be faced. The cataloguing and administration within the centre should (ideally) be handled by a specialist librarian, but such a person may not be available, so it will often be necessary to find a suitable 'volunteer' (or team of volunteers) to do the job. Also, it may be necessary to use teaching staff within the resources centre as 'human learning resources' to which students can have access; this may lead to timetabling problems, and also to problems related to staff willingness, (or unwillingness!). Finally, some technician back-up will generally be necessary in order to check and maintain any audio-visual equipment housed in the resources centre.

(d) **Attitudes** Positive attitudes to the resources centre from both staff and students are absolutely vital to the success of the venture. Unless a resources centre is generally considered to be capable of playing an effective and valuable part within the teaching system in which it is to be used, the development is almost certainly doomed to failure. All too

often, teaching staff in particular (especially the older members) are highly sceptical regarding the value of a new development such as a resources centre. If this is the case, it may be necessary to take positive steps to convince them that all the expense and effort are worthwhile, and that a more flexible student-centred approach is capable of producing a significant increase in the overall effectiveness of the learning process.

(e) **Politics and policy** Factors ranging from intra- and inter-departmental 'politics', through general institutional policy, to local and central governmental policy can all effect the development (and eventual effectiveness) of a learning resources centre. For example, if a college of further education is attempting to implement a policy of flexible course provision that includes community education, this will probably stimulate the development of a resources centre in the college; conversely, in the absence of any policy of this type, any attempts to establish such a centre may well be stifled. Similarily, important central government initiatives such as the setting up of the 'Open Tech' programme in the UK (designed to foster the training and re-training of adults at technician level by open-learning methods) will almost certainly give an impetus to the development of a resources centre in a wide range of educational institutions and training centres.

Organisation and management

Thought must also be given to a number of other factors, including the centre's *management structure*, the *resources* themselves, the *equipment*, and the *general administration* of the centre. Let us again consider these in turn.

(a) **Management structure** Problems related to the *organisation*, *management* and *operation* of a resources centre must be faced on a regular basis, and firm decisions must be made as a result. In some resources centres, these decisions are made by a single person or a small team, whereas in others, a committee of some sort is responsible for deciding policy. Such a committee might involve administrative staff, teaching staff, library staff, educational technologists, students and technicians.

(b) **Resources** Basically, the instructional media which comprise the actual learning resources in a resources centre can come from two sources: those that are '*bought in*' from a

commercial organisation or from another educational institution, and those that are *'internally produced'* in order to cater for the requirements of a given set of students within a specific subject area. *'Bought in'* resources have the obvious advantage of allowing a usable collection of resources to be assembled relatively quickly. However, some resources (particularly those with an audio-visual component) can be expensive, and, in most cases, their content is probably not entirely compatible with the objectives of the course in which they are to be used.

Resources which have been *'internally produced'* by a teacher or lecturer, on the other hand, may be much more relevant to the specific needs of a course, but, at the same time, can be extremely time-consuming to plan, produce and evaluate. In addition, devising effective student-centred learning resources may call for a wide range of new skills on the part of the teaching staff, skills which often have to be nurtured and developed over an extended period.

The various media which might be used in the production of resources are discussed in CICED booklet number 10, "A review of the different types of instructional materials available to teachers and lecturers", where it is argued that the media should (ideally) be chosen to match the objectives being taught towards. However, the precise choice of media may be influenced by a variety of other factors, one of the most important of which may well be the nature of the equipment available in the resources centre. If, for example, basic slide viewing facilities are the only visual equipment available, staff will clearly have to use slides rather than filmstrips or videotapes. Also, when buying in audio-visual resources, care must be taken to ensure compatibility with any standardized equipment already installed; any pre-recorded videocassettes that are purchased, for example, should be of the appropriate format to be played on the videocassette recorders that are available in the centre.

Finally, it must be stressed that the effective production of resources within an institution is crucially dependent on the availability of suitable production facilities, including appropriate reprographic, photographic, graphics, audio recording, and possibly also television services, together with adequate secretarial support. In some cases, it may also be necessary to provide facilities for reproducing certain types of resources *within the centre itself*. For example, a student-centred course involving extensive use of a resources centre

may have a relatively large number of students progressing through the course at roughly the same pace. If reproduction facilities within the centre allow rapid duplication of resources such as textual notes and audio tapes, this may reduce the need to store multiple copies of particular resources in order to cope with peak demand, and may well result in greater overall efficiency. Where such immediate duplication facilities are not readily available, consideration should be given to the optimum number of copies which are to be held. With 'bought in' materials, copyright restrictions may preclude direct copying, and, in such cases, any additional copies required would obviously have to be purchased.

(c) **Equipment** The range and type of equipment that needs to be installed in a resources centre depends on a number of factors, including the nature of the media to be deployed and the amount of money available. For example, if tape-slide instructional programmes are to form a significant proportion of the resources in the centre, specialist machines through which the audio commentary is automatically linked to the slides by means of inaudible electronic 'pulses' recorded on the tape can be provided in order to enable students to study these programmes. If finances do not permit the purchase of this (relatively expensive) type of delivery system, however, simple manually-operated slide viewers and basic cassette players can be combined to provide a reasonably inexpensive alternative.

The number of sets of equipment to be installed in the centre has also to be determined, and should (ideally) be sufficient to cope with the expected peak demand. If this proves to be impossible, some form of 'timetabling' or booking of student use of the resources centre may well be necessary, albeit somewhat undesirable.

The actual location of the equipment within the centre may also cause problems. If the equipment is permanently set out in the resources centre ready for use, there may be problems relating to its security. If the equipment is stored centrally, on the other hand, and has to be collected by students every time they want to use it, this inevitably reduces the 'openness' of the resources centre by erecting a (perhaps unnecessary) administrative barrier, and may well deter some students from making full use of the facilities.

As mentioned previously, regular technical maintenance of all audio-visual equipment is extremely important. If minor

faults are not immediately rectified, student interest and motivation may again be lost; it is, after all, extremely frustrating for a student to go to a resources centre, get hold of the material he or she wants, and then find that the hardware needed to study it is not working properly

(d) **General administration** A whole series of factors have to be considered regarding the running and administration of a resources centre. One of the most important of these is the question of whether the students are to be allowed free access to the resources, or whether direct access to the materials is to be restricted to staff. In an *open access* system, the resources are usually housed in the main body of the resources centre, so that the students can select and use resources 'off the shelf'. In a *closed access* system, on the other hand, the resources are usually held in a central store, and students must request resources more formally. This factor is linked both to the staffing levels that are available to run the resources centre and also to the degree of student supervision that is thought necessary for educational, operational and security reasons

Regardless of whether open or closed access is used, the resources of the centre *must* be systematically catalogued in some way in order to facilitate efficient retrieval. Where resources are stored on a closed – access basis, or are intrinsically 'non–browsable' (eg videocassettes), it may help to annotate the catalogue entry with a fairly detailed description of the contents of the resource. The importance of a good cataloguing system becomes progressively more crucial as the number of resources in the centre increases. Indeed, in the case of a resources centre where a large collection of materials is being built up, there is a strong case for placing the cataloguing of the resources in the hands of a specialist audio–visual librarian.

Other administrative duties which may be important in a resources centre include arranging the booking of resources and the borrowing of resources (since it may be desirable for students and staff to be able to use the resources outwith the premises of the resources centre itself). Also, someone must be made responsible for obtaining for preview and eventually purchasing resources produced elsewhere, on the basis of staff recommendations or other appropriate criteria. A further duty may be the keeping of records of usage of resources, possibly for the purpose of student 'credit' assessment, or, alternatively, for more 'administrative' rea-

sons such as assessing relative demand for different resources or establishing the level of use made of the resources centre as a whole.

Finally, let us take a brief look at some of the ways in which 'human resources' can be made available in a resources centre. Normally, these will be full-time teachers or lecturers who have a certain amount of 'resources centre duty' built into their timetables, but they can also be part-time members of staff or retired staff who are brought in specially for the purpose. It is also possible to make use of senior students in such a role.

Educational considerations

Once the idea of setting up a resources centre has been firmly established in a college, a number of additional factors regarding the educational (as opposed to the administrative) aspects of its operation and function have to be taken into account. These include *integration with the teaching/learning system, the role of the teacher, student characteristics* and *feedback and evaluation*, all of which will again be examined in turn.

(a) **Integration with the teaching/learning system.** We have already pointed out there are many possible ways in which resources centres can be used in educational and training systems. One key decision that has to be made is whether the resources centre is to operate in a 'front line' role or in an optional 'back-up' role.

Within the context of an open, student-centred learning facility such as a resources centre, the amount of guidance given to students regarding the selection and use of resources must strike an appropriate balance between constructive direction and freedom of choice on the part of the learner. This depends upon just how 'open' and 'flexible' the learning situations can be while still remaining relevant to the course objectives.

When a resources centre is used within a strongly student-centred, self-paced course, there is also the very real problem of coping (on the one hand) with students who complete work quickly, and (on the other hand) with those who fall far behind. Some resources centres do in fact provide 'mind-broadening' or 'enrichment' exercises for the 'high-fliers'. Another approach is to use the better students to help their weaker colleagues through a process of *peer teaching*.

In many colleges, there is an increasing awareness of the need to integrate the actual teaching and learning process with the entire range of available support services. This has led some institutions to combine library, computer and media resources under one 'umbrella' service in order to co-ordinate their activities, and thus (it is hoped) best serve the needs of the institution's courses and students.

(b) **The role of the teacher** In a resources centre, the role of the teacher effectively changes from being the sole supplier of information to being the provider of counselling and assistance for those who need it. Within a student-centred, resource-based learning course, the teacher is much more a 'manager of resources' than a 'provider of information'. Some teachers find such a radically different role rather difficult to adopt, however, especially if skills related to the in-house production of resources have also to be learned. These factors indicate a very real need for appropriate staff development programmes on such things as the production of resources, the organisation of resources centres, and the use of resource-based learning.

(c) **Student characteristics** It is a well-established fact that different students learn in different ways. To cater for individual differences in learning style, it may well be desirable to present similar information in alternative resource formats. In some instances, there may even be a case for introducing small-group teaching methods for the benefit of those who find studying on their own particularly difficult (eg *self-help groups*).

When the main role of a resources centre is an 'optional extra', there is often the additional problem of attracting those students who have seldom or never used the facilities on offer. It is a disturbing fact that many institutions which provide resource material of a remedial or 'back-up' nature find that it is *better* students who use it voluntarily, rather than the weaker students who perhaps have most to gain.

(d) **Feedback and evaluation** As with all learning situations, feedback obtained from both students and staff regarding their problems and experiences relating to resources centres can be of considerable value in determining where and how improvements need to be made. On-going evolution based on such feedback should (ideally) be a feature of *all* components of an instructional system, and it is probably true to say that this is particularly important in the case of a

resources centre, especially if it plays a key role in the work of the students who use it.

Further Reading

More detailed information on all the aspects of the planning, staffing, organisation and exploitation of learning resources centres covered in this booklet is given in the following books:

i) *Resource-Based Learning for Further and Higher Education*, by J Clarke; Croom Helm, London, 1982.

ii) *Resource-Based Learning in Post-Compulsory Education*, by P Noble; Kogan Page, London, 1980.

iii) *Learning Resources in Colleges; Their Organisation and Management*, by K G Donovan; Council for Educational Technology, London, 1981.

(iv) *The Setting Up of a Resources Centre. Book 1:* Basic Ideas, by A H Malcolm; *Book 2: Planning and Staffing*, by R N Tucker; *Book 3: Retrival Systems*, by A H Malcolm; Scottish Council for Educational Technology, Glasgow, 1976.